D. AIR QUALITY

This section describes existing air quality conditions in the region and the Milpitas area. Impacts that may result from project are identified, and mitigation measures to reduce potential impacts are recommended where feasible.

1. Setting

This setting subsection begins with a brief review of the five key issues addressed in this air quality analysis. It then summarizes the ambient standards, regulatory framework, and attainment status of the San Francisco Bay Area. The subsection concludes with the area's existing climate and general air quality conditions.

a. Air Quality Issues. Five key air quality issues are of greatest concern in this analysis: construction equipment exhaust, Carbon Monoxide (CO) hotspots, vehicle emissions, fugitive dust, and odors.

(1) Construction Equipment Exhaust. Construction activities cause combustion emissions from utility engines, heavy-duty construction vehicles, equipment which hauls materials to and from construction sites and motor vehicles that transport construction crews. Exhaust emissions from construction activities vary daily as construction activity levels change. The use of construction equipment results in localized exhaust emissions.

(2) Fugitive Dust. Fugitive dust emissions are generally associated with demolition, land clearing, exposure of soils to the air, and cut and fill operations. Dust generated during construction varies substantially on a project by project basis, depending on the level of activity, soils types, specific construction operations, and weather conditions. Particulate matter (or PM_{10}) is the specific emission of concern. However, there are a number of feasible control measures that can be implemented to significantly reduce PM_{10} emissions from construction. Rather than attempting to provide detailed quantification of anticipated construction emissions from projects, the Bay Area Air Quality Management District (BAAQMD) suggests the following:

> "The determination of significance with respect to construction emissions should be based on a consideration of the control measures to be implemented. From the Districts' perspective, quantification of emissions is not necessary, although a lead agency may elect to do so. If all of the control measures indicated as appropriate, depending on the size of the project are implemented, then air pollution from emissions from construction activities would be considered a less-than-significant impact."[1]

(3) Vehicle Emissions. Long-term air emission impacts are those associated with changes in automobile travel within the City. Mobile source emissions would result from vehicle trips associated with increased vehicular travel. As is true throughout much of the U.S., motor vehicle use is projected to increase substantially in the region.

[1] Bay Area Air Quality Management District, 1996. *BAAQMD CEQA Guidelines Assessing the Air Quality Impacts of Projects and Plans*. April. (Amended in December 1999.)

(4) Local Carbon Monoxide Hotspots. Local air quality is most affected by CO emissions from motor vehicles. CO is typically the pollutant of greatest concern because it is created in abundance by motor vehicles and it does not readily disperse into the air. Because CO does not readily disperse, areas of vehicle congestion can create "pockets" of high CO concentration called "hot spots."

While CO transport is limited, it does disperse with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations near congested roadways or intersections may reach unhealthy levels affecting local sensitive receptors (e.g., residents, schoolchildren, the elderly, hospital patients, etc). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes.

(5) Odors. Odors are also an important element of local air quality conditions. Specific activities allowed within many land use categories can raise concerns on the part of nearby neighbors. Major sources of odors include restaurants, manufacturing plants, and agricultural operations, though industrial facilities within Milpitas can also produce unacceptable levels of odors. While sources that generate objectionable odors must comply with air quality regulations, the public's sensitivity to locally produced odors often exceeds regulatory thresholds and complaints result.

b. Air Quality Standards, Regulatory Framework, and Attainment Status. Air quality standards, the regulatory framework, and State and federal attainment status are discussed below.

(1) Air Quality Standards. Both the State and federal governments have established health-based Ambient Air Quality Standards for six air pollutants: CO, ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and suspended particulate matter (PM). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

In addition to *primary* and *secondary* Ambient Air Quality Standards, the State of California has established a set of *episode* criteria for O_3, CO, NO_2, SO_2, and PM. These criteria refer to episode levels representing periods of short-term exposure to air pollutants that actually threaten public health. Health effects are progressively more severe as pollutant levels increase from Stage One to Stage Three.

California Ambient Air Quality Standards and National Ambient Air Quality Standards for the criteria air pollutants are listed in Table IV.D-1. Health effects of these criteria pollutants are described in Table IV.D-2.

(2) Regulatory Framework. The BAAQMD is primarily responsible for regulating air pollution emissions from stationary sources (e.g., factories) and indirect sources (e.g., traffic associated with new development), as well as for monitoring ambient pollutant concentrations. Indirect sources are facilities that do not have equipment that directly emits substantial amounts of pollution, but that attract large numbers of mobile sources of pollution. The California Air Resources Board (CARB) and the U.S. Environmental Protection Agency (EPA) regulate direct emissions from motor vehicles.

Table IV.D-1: Air Quality Standards

Pollutant	Averaging Time	California Standards	Federal Standards
Carbon Monoxide (CO)	8-hour	9 ppm	9 ppm
	1-hour	20 ppm	35 ppm
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	—	0.053 ppm
	1-hour	0.25 ppm	—
Ozone (O_3)	1-hour	0.09 ppm	0.12 ppm
	8-hour	—	0.08 ppm
Lead (Pb)	Quarterly	—	1.5 $\mu g/m^3$
	30-day	1.5 $\mu g/m^3$	—
Particulate Matter (PM_{10})	24-hour	50 $\mu g/m^3$	150 $\mu g/m^3$
	Annual Arithmetic Mean	20 $\mu g/m^3$	50 $\mu g/m^3$
Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 $\mu g/m^3$	15 $\mu g/m^3$
	24-hour	—	65 $\mu g/m^3$
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	—	0.03 ppm
	24-hour	0.04 ppm	0.14 ppm
	3-hour	—	0.50 ppm
	1-hour	0.25 ppm	—

Notes:
ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter

Source: U.S. Environmental Protection Agency and California Air Resources Board, 2003.

Federal Clean Air Act. The Federal 1970 Clean Air Act authorized the establishment of national health-based air quality standards and also set deadlines for their attainment. The Federal Clean Air Act Amendments of 1990 changed deadlines for attaining National Ambient Air Quality Standards as well as the remedial actions required of areas of the nation that exceed the standards. Under the Clean Air Act, State and local agencies in areas that exceed the National Ambient Air Quality Standards are required to develop State Implementation Plans to show how they will achieve the National Ambient Air Quality Standards for ozone (O_3) by specific dates.

The Clean Air Act requires that projects receiving federal funds demonstrate conformity to the approved State Implementation Plan and local air quality attainment plan for the region. Conformity with the State Implementation Plan requirements would satisfy the Clean Air Act requirements.

California Clean Air Act. In 1988, the California Clean Air Act required that all air districts in the State endeavor to achieve and maintain California Ambient Air Quality Standards for O_3, CO, SO_2 and NO_2 by the earliest practical date. Plans for attaining California Ambient Air Quality Standards were submitted to the California Air Resource Board by June 30, 1991, 1994, 1997 and

Table IV.D-2: Health Effects of Major Criteria Pollutants

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter.	• Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina).
Nitrogen Dioxide (NO_2)	• Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions.	• Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Ozone (O_3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	• Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.
Lead (Pb)	• Contaminated soil.	• Impairment of blood function and nerve construction. • Behavioral and hearing problems in children.
Fine Particulate Matter (PM_{10})	• Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions.	• Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardiorespiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.
Fine Particulate Matter ($PM_{2.5}$)	• Fuel combustion in motor vehicles, equipment, and industrial sources. • Residential and agricultural burning. • Industrial processes. • Also formed from photochemical reactions of other pollutants, including NO_X, sulfur oxides, and organics.	• Increases respiratory disease. • Lung damage. • Cancer and premature death. • Reduces visibility and results in surface soiling.
Sulfur Dioxide (SO_2)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.

Source: California Air Resources Board, 2002.

2000. The California Clean Air Act provided districts with new authority to regulate indirect sources and mandates that air quality districts focus particular attention on reducing emissions from transportation and area-wide emission sources. Each district plan is to achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each nonattainment pollutant or its precursors.

(3) Attainment Status Designations. The California Air Resources Board is required to designate areas of the State as attainment, nonattainment or unclassified for any state standard. An "attainment" designation for an area signifies that pollutant concentrations did not violate the standard for that pollutant in that area. A "nonattainment" designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. An "unclassified" designation signifies that data does not support either an attainment or nonattainment status. The California Clear Air Act divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The U.S. Environmental Protection Agency designates areas for O_3, CO, and NO_2 as either "does not meet the primary standards," or "cannot be classified" or "better than national standards." For SO_2, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified" or "better than national standards." In 1991, new nonattainment designations were assigned to areas that had previously been classified as Group I, II, or III for PM_{10} based on the likelihood that they would violate national PM_{10} standards. All other areas are designated "unclassified."

Table IV.D-3 provides a summary of the attainment status for the San Francisco Bay Area with respect to national and State ambient air quality standards.

c. Existing Climate and Air Quality. The following provides a discussion of the regional air quality, local climate and air quality in the Santa Clara Valley subregion of the San Francisco Bay Area, and air pollution climatology.

(1) Air Pollution Climatology. The amount of a given air pollutant in the atmosphere is determined by the amount of pollutant released and the atmosphere's ability to transport and/or dilute that pollutant. The major determinants of transport and dilution are wind, atmospheric stability, terrain and for photochemical pollutants, sunshine.

(2) Regional Air Quality. The City of Milpitas is located in the San Francisco Bay Area, a large shallow air basin ringed by hills that taper into a number of sheltered valleys around the perimeter. Two primary atmospheric outlets exist: the Golden Gate, a direct outlet to the Pacific Ocean, and the west delta region of the Sacramento and San Joaquin Rivers.

The City of Milpitas is within the jurisdiction of the BAAQMD, which regulates air quality in the San Francisco Bay Area. Air quality conditions in the San Francisco Bay Area have improved significantly since the District was created in 1955. Ambient concentrations of air pollutants and the number of days during which the region exceeds air quality standards have fallen dramatically. In June 1995, the Bay Area was designated as being in attainment for the federal O_3 standard. However, the

Table IV.D-3: Bay Area Attainment Status as of April 2004

Pollutant	Averaging Time	California Standards[a]		National Standards[b]	
		Concentration	Attainment Status	Concentration	Attainment Status
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Attainment	9 ppm (10 mg/m^3)	Attainment[c]
	1-Hour	20 ppm (23 mg/m^3)	Attainment	35 ppm (40 mg/m^3)	Attainment
Nitrogen Dioxide (NO_2)	Annual Mean	Not Applicable	Not Applicable	0.053 ppm (100 µg/m^3)	Attainment
	1-Hour	0.25 ppm (470 µg/m^3)	Attainment	Not Applicable	Not Applicable
Ozone (O_3)	8-Hour	Not Applicable	Not Applicable	0.08 ppm	Marginal
	1-Hour	0.09 ppm (180 µg/m^3)	Nonattainment	0.12 ppm (235 µg/m^3)	Attainment (data finding)
Particulate Matter (PM_{10})	Annual Mean	20 µg/m^3	Nonattainment[d]	50 µg/m^3	Attainment
	24-Hour	50 µg/m^3	Nonattainment	150 µg/m^3	Unclassified
Particulate Matter – Fine ($PM_{2.5}$)	Annual Mean	12 µg/m^3	Not Established	15 µg/m^3	Not Established
	24-Hour	Not Applicable	Not Applicable	65 µg/m^3	Not Established
Sulfur Dioxide (SO_2)	Annual Mean	Not Applicable	Not Applicable	80 µg/m^3 (0.03 ppm)	Attainment
	24-Hour	0.04 ppm (105 µg/m^3)	Attainment	365 µg/m^3 (0.14 ppm)	Attainment
	1-Hour	0.25 ppm (655 µg/m^3)	Attainment	Not Applicable	Not Applicable

[a] California standards for O_3, CO (except Lake Tahoe), SO_2 (1-hour and 24-hour), NO_2 and PM_{10} are values that are not to be exceeded. If the standard is for a 1-hour, 8-hour, or 24-hour average, then some measurements may be excluded. In particular, measurements are excluded that ARB determines would occur less than once per year on the average.

[b] National standards other than for O_3 and those based on annual averages or annual arithmetic means are not to be exceeded more than once a year. For example, the O_3 standard is attained if, during the most recent 3-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one.

[c] In April 1998, the Bay Area was redesignated to Attainment for the national 8-hour CO standard.

[d] In June 2002, CARB established new annual standards for $PM_{2.5}$ and PM_{10}. As of July 2003, the BAAQMD did not have sufficient monitoring data for $PM_{2.5}$ to determine the region's attainment status with respect to these national standards. The EPA plans to propose an implementation rule for $PM_{2.5}$ in September 2003 and issue the final $PM_{2.5}$ implementation rule in September 2004. The EPA is then expected to make final designations in December 2004.

Notes: Lead (Pb) is not listed in the above table because it has been in attainment since the 1980s.

ppm = parts per million
mg/m^3 = milligrams per cubic meter
µg/m^3 = micrograms per cubic meter

Source: Bay Area Air Quality Management District, Bay Area Attainment Status as of April 2004.

U.S. Environmental Protection Agency changed the Bay Area back to nonattainment status in August 1998 due to new exceedances of the standard in 1995 and 1996. The BAAQMD submitted an Ozone Attainment Plan (1999 Plan) to the U.S. Environmental Protection Agency in August of 1999 to set policies and guidelines aimed at reducing O_3 in the Bay Area by November 15, 2000. The U.S. Environmental Protection Agency approved parts and disapproved parts of the 1999 Ozone Plan for failing to ensure attainment status for O_3. As a result, the U.S. Environmental Protection Agency recommended to the federal government that it withhold transportation funding for specific projects within the Bay Area. The BAAQMD has developed and adopted a new plan (2001 Ozone Plan) to correct the deficiencies of the 1999 Ozone Plan and respond to the finding of failure to achieve attainment status for O_3. The new plan was adopted in October 2001 by the BAAQMD's Governing Board and was approved by the California Air Resources Board in November 2001. Current data shows that the Bay Area has not exceeded the federal O_3 standard within the past three years.

Levels of PM_{10} in the Bay Area currently exceed California Clean Air Act standards and, therefore, the area is considered a nonattainment area for this pollutant relative to the State standards. PM_{10} levels monitored in San Jose exceeded the State's standard in 2001 and 2002, but were below the State's standard in 2003. The Bay Area is an unclassified area for the federal PM_{10} standard. The federal standard was not exceeded in San Jose in the past three years (2001 through 2003).

No exceedances of the State or federal CO standards have been recorded at any of the region's monitoring stations since 1991. The Bay Area is currently considered a maintenance area for State and federal CO standards.

The BAAQMD's Bay Area Clean Air Plans for 1991, 1994, 1997 and 2000 contain districtwide control measures to reduce CO and O_3 precursor emissions. Generally, the State standards for these pollutants are more stringent than the national standards.

Exceedances of air quality standards in the San Francisco Bay Area occur primarily during meteorological conditions conducive to high pollution levels, such as cold, windless winter nights or hot, sunny summer afternoons.

(3) Local Climate and Air Quality. The project site is located in the Santa Clara Valley subregion of the San Francisco Bay Area. The Santa Clara Valley is bounded by the San Francisco Bay to the north and by mountains to the east, south and west. Temperatures are warm on summer days and cool on summer nights, and winter temperatures are fairly mild. At the northern end of the valley, mean maximum temperatures are in the low-80's during the summer and the high-50's during the winter, and mean minimum temperatures range from the high-50's in the summer to the low-40's in the winter. Further inland, where the moderating effect of the bay is not as strong, temperature extremes are greater. For example, in San Martin, located 27 miles south of the San Jose Airport, temperatures can be more than 10 degrees warmer on summer afternoons and more than 10 degrees cooler on winter nights.

Winds in the valley are greatly influenced by the terrain, resulting in a prevailing flow that roughly parallels the valley's northwest-southeast axis. A north-northwesterly sea breeze flows through the valley during the afternoon and early evening, and a light south-southeasterly drainage flow occurs during the late evening and early morning. In the summer the southern end of the valley sometimes

becomes a "convergence zone," when air flowing from the Monterey Bay gets channeled northward into the southern end of the valley and meets with the prevailing north-northwesterly winds.

Wind speeds are greatest in the spring and summer and weakest in the fall and winter. Nighttime and early morning hours frequently have calm winds in all seasons, while summer afternoons and evenings are quite breezy. Strong winds are rare, associated mostly with the occasional winter storm.

The air pollution potential of the Santa Clara Valley is high. High summer temperatures, stable air and mountains surrounding the valley combine to promote ozone formation. In addition to the many local sources of pollution, ozone precursors from San Francisco, San Mateo and Alameda Counties are carried by prevailing winds to the Santa Clara Valley. The valley tends to channel pollutants to the southeast. In addition, on summer days with low level inversions, ozone can be recirculated by southerly drainage flows in the late evening and early morning and by the prevailing northwesterlies in the afternoon. A similar recirculation pattern occurs in the winter, affecting levels of carbon monoxide and particulate matter. This movement of the air up and down the valley increases the impact of the pollutants significantly.

Pollution sources are plentiful and complex in this subregion. The Santa Clara Valley has a high concentration of industry at the northern end, in the Silicon Valley. Some of these industries are sources of air toxics as well as criteria pollutants. In addition, Santa Clara Valley's large population and many work-site destinations generate the highest mobile source emissions of any subregion in the Bay Area.

Pollutant monitoring results for the years 2001 to 2003 (see Tables IV.D-4 and IV.D-5) at the San Jose ambient air quality monitoring stations indicate that air quality in the project area has generally been good in recent years. As indicated in the monitoring results the State annual PM_{10} standard has been exceeded in each of the past three years and no violations of federal PM_{10} standard were recorded. The federal $PM_{2.5}$ standard was exceeded once during the 3-year period and once for the State $PM_{2.5}$ standard. Federal 1-hour and 9-hour O_3 standards have not been exceeded in San Jose within the past three years. State 1-hour O_3 standards have been exceeded in two of the past three years. CO and NO_2 standards were not exceeded in this area during the 3-year period.

2. Impacts and Mitigation Measures

This section analyzes the impacts related to air quality that could result from implementation of the NMSD Project. The subsections begin with criteria of significance, which establish the thresholds for determining whether a project impact is significant. The latter part of this section presents the potential air quality impacts associated with the proposed project. Mitigation measures are provided as appropriate.

a. Significance Criteria. The proposed project would result in a significant impact if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;

Table IV.D-4: Results from the San Jose Ambient Air Quality Monitoring Station, 2001 to 2003

	Ozone			Carbon Monoxide		Nitrogen Dioxide		PM_{10}		
Year	Max. 1-Hour (pphm)	National D-O-S	California D-O-S	Max. 1-Hour (ppm)	California D-O-S	Max. 1-Hour (pphm)	California D-O-S	Annual Geometric Mean (mg/m^3)	Exceed National Standard	Exceed California Standard
2001	10.5	0	2	7.6	0	10.8	0	29	No	Yes
2002	9.0	0	0	5.9	0	7.6	0	31	No	Yes
2003	11.9	0	4	5.5	0	9.1	0	24	No	Yes

Notes: D-O-S = Days Over Standard
pphm = parts per hundred million
ppm = parts per million
ppb = parts per billion
mg/m^3 = milligrams per cubic meter

Source: CARB and EPA, 2004.

Table IV.D-5: Results from the San Jose Ambient Air Quality Monitoring Station, 2001 to 2003

	Ozone		Carbon Monoxide		Sulfur Dioxide		$PM_{2.5}$		
Year	Max. 8-Hour (pphm)	National D-O-S	Max. 8-Hour (ppm)	California D-O-S	Max. 24-Hour (pphm)	California D-O-S	Annual Geometric Mean (mg/m^3)	Exceed National Standard	Exceed California Standard
2001	7.4	0	5.1	0	NM	NM	12.4	No	No
2002	6.8	0	3.4	0	NM	NM	17.5	Yes	Yes
2003	8.2	0	4.0	0	NM	NM	11.7	No	No

Notes: D-O-S = Days Over Standard
pphm = parts per hundred million
ppm = parts per million
ppb = parts per billion
mg/m^3 = milligrams per cubic meter
NM = not monitored

Source: CARB and EPA, 2004.

- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations;
- Create objectionable odors affecting a substantial number of people;
- Contribute to CO concentrations exceeding the State ambient air quality standard of 9 ppm averaged over 8 hours and 20 ppm for 1 hour;
- Result in total emissions of ROG, NO_x, or PM_{10} of 15 tons per year or greater, or 80 pounds (36 kilograms) per day or greater;
- Result in potential to expose persons to substantial levels of TACs, such that the probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds 10 in one million;

- Result in ground level concentrations of non-carcinogenic toxic air contaminants such that the Hazard Index would be greater than 1 for the MEI; or
- Result in a fundamental conflict with the local general plan, when the general plan is consistent with the regional air quality plan. When the general plan fundamentally conflicts with the regional air quality plan, then if the contribution of the proposed project is cumulatively considerable when analyzed the impact to air quality should be considered significant.

For project-level impact analysis, the BAAQMD provides various thresholds and tests of significance. For ROG, NOx and PM_{10}, a net increase of 80 pounds per day is considered significant, while for CO, an increase of 550 pounds per day would be considered significant if it leads to or contributes to CO concentrations exceeding the State Ambient Air Quality Standard of 9 ppm averaged over 8 hours and 20 ppm for 1 hour (i.e., if it creates a "hot spot"). Generally, if a project results in an increase in ROG, NOx, or PM_{10} of more than 80 pounds per day, then it would also be considered to contribute considerably to a significant cumulative effect. For projects that would not lead to a significant increase of ROG, NOx, or PM_{10} emissions, the cumulative effect is evaluated based on a determination of the consistency of the project with the regional Clean Air Plan. These criteria recommended by the BAAQMD are consistent with the criteria used by the City of Milpitas, listed above.

Impacts from $PM_{2.5}$ emissions have not been analyzed quantitatively as there are no recommended significance thresholds from the BAAQMD or the City of Milpitas. Also, the air quality models that are used to estimate emissions of ROG, NOx, CO and PM_{10} currently do not have the capability to estimate $PM_{2.5}$ separately. Therefore, impacts from $PM_{2.5}$ emissions from the project (particularly the diesel particulate matter) have been analyzed qualitatively.

~~c.~~**b. Less-than-Significant Air Quality Impacts**. The less-than-significant impacts that would result from implementation of the NMSD Project are described below.

~~c.~~

(1) Carbon Monoxide Concentrations. Traffic generated by the proposed project would contribute to local carbon monoxide concentrations. On the local scale the pollutant of greatest concern is carbon monoxide. Concentrations of this pollutant are related to the levels of traffic and congestion along streets and at intersections. The CALINE-4 computer simulation model was used to evaluate nine intersections near the project site. These intersections were selected on the basis of afternoon peak hour level of service.

The results of the CALINE-4 modeling for the nine selected intersections are shown in Table IV.D-6. Concentrations are shown for three scenarios:

- Existing Traffic (Year 2004)
- Baseline Without Project (Year 2005)
- Baseline With Project (Year 2005)

The predicted 1-hour concentrations in Table IV.D-6 are to be compared to the State and federal ambient 1-hour air quality standards of 20 ppm and 35 ppm, respectively. Predicted 8-hour concen-

Table IV.D-6: Worst-Case Carbon Monoxide Concentrations near Selected Intersections[a]

Intersection	Existing (2004)		Baseline (2005) Without Project		Baseline (2005) With Project	
	1-Hour	8-Hour	1-Hour	8-Hour	1-Hour	8-Hour
Abel Street and Marylinn Drive	9.6	6.5	9.4	6.4	10.0	6.8
Abel Street and Weller Lane	8.9	6.1	9.0	6.1	9.3	6.3
Main Street and Weller Lane	8.1	5.5	8.2	5.6	8.5	5.8
Abel Street and Calaveras Boulevard	11.0	7.5	11.4	7.8	11.4	7.8
Main Street and Calaveras Boulevard Off-Ramp	8.3	5.6	8.4	5.7	9.2	6.3
Main Street and Calaveras Boulevard On-Ramp	8.9	6.1	8.8	6.0	9.2	6.3
Abel Street and Serra Way	9.0	6.1	8.8	6.0	8.8	6.0
Main Street and Serra Way	8.6	5.8	8.5	5.8	8.6	5.8
Milpitas Boulevard and Jacklin Road	9.9	6.8	9.7	6.6	9.8	6.7
Milpitas Boulevard and Calaveras Boulevard	11.8	8.1	11.6	7.9	11.7	8.0
Abel Street and Redwood Avenue	9.0	6.1	8.9	6.1	9.1	6.2
Abbot Avenue and Calaveras Boulevard	11.3	7.7	11.1	7.6	11.2	7.7
Town Center Drive and Calaveras Boulevard	10.2	7.0	10.2	7.0	10.3	7.0
Hillview Drive and Calaveras Boulevard	10.9	7.5	10.6	7.2	10.7	7.3
Milpitas Boulevard and Town Center Drive	8.9	6.1	8.8	6.0	8.9	6.1
Milpitas Boulevard and Escuela Parkway	8.6	5.8	8.5	5.8	8.6	5.8
Most Stringent Standard	**20.0[b]**	**9.0**	**20.0**	**9.0**	**20.0**	**9.0**

[a] All amounts in parts per million (ppm). Include background concentrations of 7.4 and 5.0 for the 1-hour and 8-hour concentrations, respectively.
[b] State standard.

Source: LSA Associates, Inc., September 2004.

trations in Table IV.D-6 are to be compared to the State and federal 8-hour standards of 9 ppm. Existing concentrations meet all ambient air quality standards. The impact of the proposed project on local carbon monoxide concentrations would be considered less than significant and no mitigation would be required.

(2) Local Plan Consistency. The population in the City of Milpitas is expected to grow from 62,698 people in 2000 to 68,400 people in 2005. The projected growth is 4,602 people over a 5-year period. This amounts to approximately a 1.4 percent annual growth rate.

Figure 3 on page 6 of the Bay Area 2000 CAP depicts the growth in population, vehicles, and vehicle miles traveled in the Bay Area. This figure shows that VMT growth (80 percent growth from 1980 to 2006, or approximately 2.3 percent a year) outpaced population growth (40 percent growth from 1980 to 2006, or approximately 1.3 percent a year) in the Bay Area. Although there is no comparable

figure to show such growth for the City of Milpitas, it is assumed that the City generally falls within such growth rates.

The proposed project will add up to 110 senior residential units to the City. Based on the assumptions that no more than two people would live in a unit, the proposed project will increase the City's population by approximately 220 people. This growth is consistent with what is anticipated under the City's General Plan and falls within the population projections prepared by Association of Bay Area Governments (ABAG). The proposed project will not require any amendments to the City's General Plan. As a result, it would not conflict with the Bay Area 2000 CAP.

(3) Odor Nuisance Problems. Though offensive odors from stationary sources rarely cause any physical harm, they still remain unpleasant and can lead to public distress generating citizen complaints to local governments. The occurrence and severity of odor impacts depend on the nature, frequency and intensity of the source; wind speed and direction; and the sensitivity of receptors. Odor impacts should be considered for any proposed new odor sources located near existing receptors, as well as any new sensitive receptors located near existing odor sources. Generally, increasing the distance between a receptor and the source to an acceptable level will mitigate odor impacts. No new stationary odor sources are proposed as part of the proposed project. Therefore, there would be no odor-related impacts on sensitive receptors.

~~d.~~**c. Significant Air Quality Impacts and Mitigation Measures**. The proposed project would result in two significant impacts related to air quality as described below.

Impact AIR-1: Activities associated with demolition, site preparation and construction would generate short-term emissions of criteria pollutants, including suspended and inhaleable particulate matter and equipment exhaust emissions. (S)

Project-related construction activities would include site preparation, earthmoving and general construction. Site preparation includes activities such as general land clearing and grubbing. Earthmoving activities include cut and fill operations, trenching, soil compaction and grading. General construction includes adding improvements such as roadway surfaces, structures and facilities. The emissions generated from these construction activities include:

- Dust (including PM_{10} and $PM_{2.5}$) primarily from "fugitive" sources (i.e., emissions released through means other than through a stack or tailpipe) such as soil disturbance;
- Combustion emissions of criteria air pollutants (ROG, NO_x, CO, SO_x, PM_{10}) primarily from operation of heavy equipment construction machinery (primarily diesel operated), portable auxiliary equipment and construction worker automobile trips (primarily gasoline operated); and
- Evaporative emissions (ROG) from asphalt paving and architectural coating applications.

Demolition may result in airborne entrainment of asbestos, a toxic air contaminant, particularly where structures built prior to 1980 are being demolished. Some structural components of the buildings to be demolished may contain hazardous materials such as asbestos used in insulation, fire retardants, or building materials (floor tile, roofing, etc.) and lead-based paint. If asbestos were found to be present in building materials to be removed, demolition and disposal would be required to be conducted in accordance with procedures specified by Regulation 11, Rule 2 (Asbestos Demolition, Renovation and Manufacturing) of BAAQMD's regulations. Therefore, the required compliance with existing

regulations, as detailed in Mitigation Measure HAZ-5 in Section IV.G, Hazards, would ensure that the potential for public health hazards associated with airborne asbestos fibers or lead dust would be at a less than significant level.

Construction-related fugitive dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. In the absence of mitigation, construction activities may result in significant quantities of dust, and as a result, local visibility and PM_{10} and $PM_{2.5}$ concentrations may be adversely affected on a temporary and intermittent basis during the construction period. In addition, the fugitive dust generated by construction would include not only PM_{10}, but also larger particles, which would fall out of the atmosphere within several hundred feet of the site and could result in nuisance-type impacts. The BAAQMD's approach to analyses of fugitive dust emissions from construction is to emphasize implementation of effective and comprehensive dust control measures rather than detailed quantification of emissions. The District considers any project's construction related impacts to be less than significant if the required dust-control measures are implemented. Without these measures, the impact is generally considered to be significant, particularly if sensitive land uses are located in the project vicinity. In the case of this project, residential land uses are located as close as 50 feet from the boundaries of the project site. Therefore, without mitigation, the impact of fugitive dust emissions would be considered significant.

Construction activities would also result in the emission of ROG, NO_x, CO, SO_x and PM_{10} from equipment exhaust, construction-related vehicular activity and construction worker automobile trips. Emission levels for construction activities would vary depending on the number and type of equipment, duration of use, operation schedules, and the number of construction workers. Criteria pollutant emissions of ROG and NO_x from these emission sources would incrementally add to the regional atmospheric loading of ozone precursors during project construction. BAAQMD CEQA Guidelines recognize that construction equipment emits ozone precursors, but indicate that such emissions are included in the emission inventory that is the basis for regional air quality plans. Therefore, construction emissions of ROG and NO_x are not expected to impede attainment or maintenance of ozone standards in the Bay Area (BAAQMD, 1999). The impact of construction equipment exhaust emissions would therefore be less than significant.

During construction various diesel-powered vehicles and equipment would be in use. In 1998 the CARB identified particulate matter from diesel-fueled engines as a toxic air contaminant (TAC). CARB has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled engines.[2] High volume freeways, stationary diesel engines and facilities attracting heavy and constant diesel vehicle traffic (distribution centers, truckstop) were identified as having the highest associated risk. BAAQMD CEQA Guidelines identify the following types of facilities as a potential for exposing sensitive receptors to high levels of diesel exhaust:

- Truck stop
- Warehouse/Distribution Center
- Large retail or industrial facility
- High volume transit center
- School with high volume of bus traffic

[2] California Air Resources Board, *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*, October 2000.

- High volume highway
- High volume arterial/roadway with high level of diesel traffic

Health risks from toxic air contaminants are a function of both concentration and duration of exposure. Unlike the above types of sources, construction diesel emissions are temporary, affecting an area for a period of days or perhaps weeks. Additionally, construction related sources are mobile and transient in nature, and the bulk of the emission occurs within the project site at a substantial distance from nearby receptors. As a result, health risks from construction emissions of diesel particulate are not considered significant.

Mitigation Measure AIR-1: Implementation of the following mitigation measures would reduce this impact to a less-than-significant level.

- The basic and enhanced control measures listed in Table IV.D-7 shall be implemented during construction of the proposed project.
- Any temporary haul roads to the soil stockpile area shall be routed away from existing neighboring land uses. Any temporary haul roads shall be surfaced with gravel and or regularly watered to control dust or treated with an appropriate dust suppressant.
- Water sprays shall be utilized to control dust when material is being added or removed from the stockpile. When the stockpile is undisturbed for more than one week, the storage pile shall be treated with a dust suppressant or crusting agent to eliminate wind-blown dust generation.
- All neighboring properties located within 500 feet of property lines shall be provided with the name and phone number of a designated construction dust control coordinator who will respond to complaints within 24 hours by suspending dust-producing activities or providing additional personnel or equipment for dust control as deemed necessary. The phone number of the BAAQMD pollution complaints contact shall also be provided. The dust control coordinator shall be on-call during construction hours. The coordinator shall keep a log of complaints received and remedial actions taken in response. This log shall be made available to City staff upon its request.

The above mitigation measures include all feasible measures for construction emissions identified by the BAAQMD. According to the District's threshold of significance for construction impacts, implementation of the measures would reduce construction impacts of the proposed project to a less-than-significant level. (LTS)

Impact AIR-2: Project-related regional emissions would exceed the BAAQMD thresholds of significance for ozone precursors. (S)

The URBEMIS2002 model was used to calculate emissions from all vehicle trips to or from the project site. This analysis was based on trip generations calculated for this project by Fehr & Peers Transportation Consultants (September 2004) and assumed a year 2005 vehicle population.

Table IV.D-7: Feasible Control Measures for Construction Emissions of PM_{10}

Basic Control Measures - The following controls should be implemented at all construction sites.
• Water all active construction areas at least twice daily or use post palliative.
• Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard.
• Pave, apply water three times daily, or apply (nontoxic) soil stabilizers on all unpaved access roads, parking areas, and staging areas at construction sites.
• Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites.
• Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets.
Enhanced Control Measures - The following measures should be implemented at construction sites greater than 4 acres in area.
• All "Basic" control measures listed above.
• Hydroseed or apply (nontoxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more).
• Enclose, cover, water twice daily or apply (nontoxic) soil binders to exposed stockpiles (dirt, sand, etc.)
• Limit traffic speeds on unpaved roads to 15 mph.
• Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
• Replant vegetation in disturbed areas as quickly as possible.
Optional Control Measures - The following control measures are strongly encouraged at construction sites that are large in area, located near sensitive receptors or which for any other reason may warrant additional emissions reductions.
• Install wheel washers for all exiting trucks, or wash off the tires or tracks of all trucks and equipment leaving the site.
• Install wind breaks, or plant trees/vegetative wind breaks at windward side(s) of construction areas.
• Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph.
• Limit the area subject to excavation, grading, and other construction activity at any one time.

Source: BAAQMD, 1999.

Table IV.D-8: Regional Vehicular Emissions

	Emissions (pounds/day)			
	ROG	**CO**	**NO_x**	**PM_{10}**
Project Emissions	68	680	80	41
BAAQMD Thresholds	80	550	80	80

Source: LSA Associates, Inc., 2004.

Daily emissions associated with project vehicle use are shown in Table IV.D-8. As shown, emissions associated with the proposed project vehicle trips would not exceed the BAAQMD thresholds of significance for reactive organic gases (ROG), oxides of nitrogen (NO_x), and PM_{10} (particulate matter, 10 micron). The carbon monoxide vehicle-related emissions are projected to exceed the threshold. However, as shown in section b(2) above, the proposed project will not result in any CO hotspots.

In addition to emissions associated with vehicle trips, the proposed project would generate emissions associated with the proposed COGEN facility that will operate on a daily basis. The details of this facility, such a horsepower rating and hours of operation, are currently unknown. However, based on the results shown in Table IV.D-8, any operation would result in an exceedance of the BAAQMD's NO_X threshold. Therefore, the proposed project would result in significant regional air quality impact.

Mitigation Measure AIR-2: The *BAAQMD CEQA Guidelines* document identifies potential mitigation measures for various types of projects. The following are considered to be feasible and effective in further reducing vehicle trip generation and resulting emissions from the project:

- Provide neighborhood-serving shops and services within or adjacent to residential development.
- Provide transit facilities (e.g., bus bulbs/turnouts, benches, shelters).
- Provide shuttle service to regional transit system or multimodal center.
- Provide shuttle service to major destinations such as employment centers, shopping centers and schools.
- Provide bicycle lanes and/or paths, connected to community-wide network.
- Provide sidewalks and/or paths, connected to adjacent land uses, transit stops, and/or community-wide network.
- Provide satellite telecommunication centers in large residential developments.
- Provide secure and conveniently located bicycle and storage for residents.
- Wire each housing unit to allow use of emerging electronic communication technology.
- Implement feasible TDM measures including a ride-matching program, coordination with regional ridesharing organizations and provision of transit information.

Implementation of the above mitigation measures would potentially reduce the regional vehicle emissions by up to 10 percent. However, it is anticipated that the NO_X emissions would continue to exceed the BAAQMD's threshold. Therefore, the project's regional air quality impacts would remain significant. (SU)